REMARKS

Status of the Application:

Claims 1–19 are the claims of record of the application. Claims 1–17 and 19 have been rejected and claim 18 has been allowed.

Amendment to the Claims:

Applicants have amended claim 19 to overcome the indefiniteness rejection under 35 USC 112 Second Paragraph.

Claim Rejections -35 USC § 112 First Parag. (Nonenablement)

In the Office Action, claims 1–17 and 19 were rejected under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. The examiner asserts that, for example, with respect to claim 1, the limitation "said sensor having more than two output values that vary as the magnitude of the control signal" is not present, e.g., is not shown in FIG. 7 and/or in the description. The examiner then argues that "the output of the sense amplifier 731 has two values, i.e, high and low, corresponding to the output of the low pass filter (713)."

Applicants respectfully but vigorously disagree. First, Applicants wish to point out that 713 is a loop filter, and thus filters an analog quantity. Its output is analog. It is the *frequency content* that is filtered. Those in the art will understand that a filter such as filter 713 provides an analog output whose frequency content has been changed, not a binary-valued output as erroneously assumed by the examiner. Therefore, the input to the sense amplifier is *an analog quantity*. The sense amplifier 713 measures and provides an analog quantity. The analog-to-digital converter (ADC) 733 converts this to a multi-bit digital signal—a measurement that varies as the quantity input to the sense amplifier. Thus the sensor of claim 1 is the combination the sense amplifier 731 and the ADC 733.

Thus, with respect to claim 1, what is shown in FIG. 7 and described, for example, in paragraph [0056] is in one embodiment a "sensor having more than two output values that vary as the magnitude of the control signal."

This rejection of independent claim 1 under 35 USC 112 first paragraph for non-enablement is thus overcome. Reconsideration and reversal of the rejection are requested.

The rejections of the other independent claims: 2, 5, 6, 8, 10, 11, 13, 14, and 16 for non-enablement for the same erroneous argument that filter 713 followed by the sense amplifier produces a binary-valued output are also overcome.

The rejection of the dependent claims 3, 4, 7, 9, 12, 15, 17, and 19 are thus also overcome. Reconsideration and reversal of the rejections of the claims under 35 USC 112 First Paragraph are requested.

Claim Rejections -35 USC § 112 Second Paragraph (Indefiniteness)

In the Office Action, claim 19 was rejected under 35 USC 112, second paragraph, as being indefinite. Applicants have amended the claim to now state that "said sensor <u>includes a sense amplifier</u> coupled to an analog to digital converter to provide a multi-bit digital signal."

This is definite and consistent with claim 1.

Thus the rejection of claim 19 under 35 USC § 112 Second Paragraph is overcome. Claim 19 as amended is allowable and action to that end is respectfully requested.

Claim Rejections -35 USC § 102

In the Office Action, claims 1–4, 6, 8–12, 14 and 16–17 were rejected under 35 USC 102(e) as being anticipated by Mucke et al. (U.S. Patent 6,211,745). In the Office Action, claims 5 and 13 were also rejected under 35 USC 102(e) as being anticipated by Mucke et al. (U.S. Patent 6,211,745).

The examiner once again is presenting that Mucke et al.'s comparator 702 reads on the sensor, e.g., the sensor of claim 1. Mucke's comparator 702 has only a binary output that indicates whether or not the tuning voltage V_{tune} is higher than the reference or threshold voltage V_{ref}, to Applicants' sensor. In one embodiment, the sensor is the combination of the sense amplifier and the ADC, which, as argued above, produces a multi-bit output.

The examiner's reading of claim 1 would be consistent with the examiner's argument above rejecting the claims for non-enablement and asserting that the sensor (sense amplifier 731 with ADC 733) produces a two-valued output. However, as argued above, the examiner is incorrect. Applicants' sensor clearly produces a multi-bit digital signal (see the multi-bit output of the ADC in Applicants' FIG. 7).

Claim 1 clearly indicates that the sensor of the control input of the VCO has more than two output values that vary as the magnitude of the control input. This is not disclosed in Mucke et al..

The terms "sensor" and "sensing" in other claims have similar limitations.

The rejection of claims 1–17, and 19 (as amended) is thus believed in error, and the claims allowable. Reconsideration, reversal of the rejections, and allowance are respectfully requested.

Claim Rejections -Double Patenting

In the Office Action, claims 1–17 and 19 were rejected under the judicially created doctrine of double patenting over claims 1–10 of U.S. Patent No. since the claims, if allowed, would improperly extend the "right to exclude" already 6,686,804 granted in the patent.

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A properly signed terminal disclaimer is included with this response to overcome the double patenting rejection.

For these reasons, and in view of the above amendment and provided terminal disclaimer, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Conclusion

The Applicants believe all of Examiner's rejections have been overcome with respect to all remaining claims (as amended), and that the remaining claims are allowable. Action to that end is respectfully requested.

If the Examiner has any questions or comments that would advance the prosecution and allowance of this application, an email message to the undersigned at dov@inventek.com, or a telephone call to the undersigned at +1-510-547-3378 is requested.

Respectfully Submitted,

_____July 26, 2004_____   _____
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